AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An absorbent binder desiccant composition comprising water and a water-soluble ionic absorbent binder polymer having an alkoxysilane functionality and undergoing spontaneous crosslinking without a catalyst, radiation or other inducement within about 10 minutes after application to a substrate at a temperature of about 120°C or less, to reach an absorbent capacity of at least one gram of fluid per gram of polymer using the centrifuge retention capacity test, and domains of at least one desiccant component mixed with and dispersed within the water-soluble absorbent binder polymer prior to crosslinking, wherein the absorbent binder polymer spontaneously crosslinks by hydrolysis of the alkoxysilane functionality and subsequent removal of the water after the absorbent binder desiccant composition is applied to the substrate.

2. (Original) The absorbent binder desiccant composition of Claim 1, wherein the water-soluble ionic polymer and the desiccant component are present in a dry weight ratio of about 100:1 to about 1:10.

3. (Original) The absorbent binder desiccant composition of Claim 1, wherein the water-soluble ionic polymer and desiccant are present in a dry weight ratio of about 10:1 to about 1:3.

4. (Previously Presented) The absorbent binder desiccant composition of Claim 1, wherein the water-soluble ionic polymer undergoes spontaneous crosslinking within about 10 minutes at a temperature of about 120°C or less, to reach an absorbent capacity of at least 3 grams of fluid per gram of polymer using the centrifuge retention capacity test.

5. (Original) The absorbent binder desiccant composition of Claim 1, wherein the water-soluble ionic polymer comprises at least about 15 mole percent ionic polymer units.

6. (Original) The absorbent binder desiccant composition of Claim 1, wherein the ionic polymer has a negative charge.

7. (Original) The absorbent binder desiccant composition of Claim 6, wherein the ionic polymer comprises a carboxyl group-containing monomer.

8. (Original) The absorbent binder desiccant composition of Claim 1, wherein the ionic polymer has a positive charge.

9. (Original) The absorbent binder desiccant composition of Claim 8, wherein the ionic polymer comprises a quaternary ammonium group-containing monomer.

10. (Original) The absorbent binder desiccant composition of Claim 8, wherein the ionic polymer comprises a reaction product of 1) a monomer selected from the group consisting of acryloyloxyethyl-trialkyl-substituted ammonium salts, acryloyloxypropyl-trialkyl-substituted ammonium salts, acrylamidoethyl-trialkyl-substituted ammonium salts, and acrylamidopropyl-trialkyl-substituted ammonium salts, with 2) a monomer selected from the group consisting of methacryl esters which contain an alkoxysilane group and acryl esters which contain an alkoxysilane group.

11. (Canceled)

12. (Original) The absorbent binder desiccant composition of Claim 1, wherein the desiccant component comprises a desiccant selected from the group consisting of sodium acetate, zinc chloride, zinc bromide, calcium oxide, calcium sulfate, montmorillonite clay, synthetic zeolites, synthetic gels, starches, and combinations thereof.

13. (Original) A combination comprising the absorbent binder desiccant composition of Claim 1, and a substrate.

14. (Currently Amended) An absorbent binder desiccant composition comprising water, a water-soluble absorbent binder polymer component and domains of a desiccant component mixed with and dispersed within the water-soluble absorbent binder polymer component prior to crosslinking in a dry weight ratio of about 100:1 to about 1:10, wherein the absorbent binder polymer component comprises:

a) about 15 to about 99.8% by mass of monoethylenically unsaturated polymer units;

b) about 0.1 to about 20% by mass polyacrylate ester units that include an alkoxysilane functionality; and

c) about 0.1 to about 75% by mass polymer units selected from the group consisting of polyolefin glycol units, polyolefin oxide units, and combinations thereof;

and the absorbent binder polymer component spontaneously crosslinks without a catalyst, radiation or other inducement by hydrolysis of the alkoxysilane functionality and subsequent removal of the water after the absorbent binder desiccant composition is applied to a substrate.

15. (Original) The absorbent binder desiccant composition of Claim 14, wherein the monoethylenically unsaturated polymer units and the polyacrylate ester units including an alkoxysilane functionality are copolymerized.

16. (Original) The absorbent binder desiccant composition of Claim 14, wherein at least some of the polymer units selected from the group consisting of polyolefin glycol units, polyolefin oxide units, and combinations thereof are copolymerized with at least some of the polyacrylate ester units.

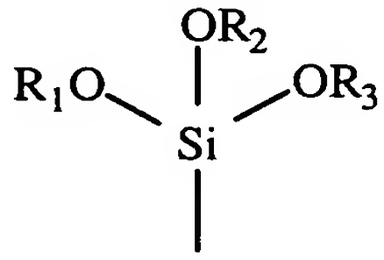
17. (Original) The absorbent binder desiccant composition of Claim 14, wherein the absorbent binder component comprises about 25 to about 89.5% by mass monoethylenically unsaturated polymer units, about 0.5 to about 15% by mass ester units selected from the group consisting of acrylate and methacrylate ester units that include an

alkoxysilane functionality, and about 10 to about 60% by mass of units selected from the group consisting of polyolefin glycol and polyolefin oxide units.

18. (Original) The absorbent binder desiccant composition of Claim 14, wherein the absorbent binder component comprises about 30 to about 79% by mass monoethylenically unsaturated polymer units, about 1.0 to about 10% by mass ester units selected from the group consisting of acrylate and methacrylate ester units that include an alkoxysilane functionality, and about 20 to about 50% by mass of units selected from the group consisting of polyolefin glycol and polyolefin oxide units.

19. (Original) The absorbent binder desiccant composition of Claim 14, wherein the monoethylenically unsaturated polymer units comprise a monomer unit selected from the group consisting of a carboxyl group-containing monomer, a carboxylic acid anhydride group-containing monomer, a carboxylic acid salt-containing monomer, a sulfonic acid group-containing monomer, an amide group-containing monomer, and a quaternary ammonium salt.

20. (Original) The absorbent binder desiccant composition of Claim 14, wherein the alkoxysilane functionality comprises a trialkoxysilane group having the following structure:



wherein R1, R2 and R3 are alkyl groups independently having from 1 to 6 carbon atoms.

21. (Original) The absorbent binder desiccant composition of Claim 14, wherein the absorbent binder component and desiccant component are present in a dry weight ratio of about 10:1 to about 1:3.

22. (Canceled)

23. (Original) The absorbent binder desiccant composition of Claim 14, wherein the desiccant component comprises a compound selected from the group consisting of sodium acetate, zinc chloride, zinc bromide, calcium oxide, calcium sulfate, montmorillonite clay, synthetic zeolites, synthetic gels, starches, and combinations thereof.

24. (Original) A combination comprising the absorbent binder desiccant composition of Claim 14, and a substrate.

25. (Currently Amended) A combination of an absorbent binder desiccant structure and a substrate, wherein the absorbent binder desiccant structure is formed from water and an absorbent binder component comprising a water-soluble absorbent binder polymer having an alkoxysilane functionality and undergoing spontaneous crosslinking <u>without a catalyst, radiation or other inducement</u> within about 10 minutes after application to the substrate at a temperature of about 120°C or less, to reach an absorbent capacity of at least one gram of fluid per gram of polymer using the centrifuge retention capacity test, and domains of a desiccant component <u>mixed with and</u> dispersed within the water-soluble absorbent binder polymer prior to crosslinking, wherein the absorbent binder polymer spontaneously crosslinks by hydrolysis of the alkoxysilane functionality and subsequent removal of the water after the absorbent binder component is applied to the substrate.

26. (Original) A humidity control package comprising the combination of Claim 25.

27. (Original) A bottle comprising the combination of Claim 25.

28. (Original) A can comprising the combination of Claim 25.

29. (Original) A bread box comprising the combination of Claim 25.

30. (Original) A cup comprising the combination of Claim 25.

31. (Original) The combination of Claim 25, wherein the absorbent binder component has a glass transition temperature of less than about 5°C.

32. (Original) The combination of Claim 25, wherein the water-soluble polymer is crosslinked after being combined with the substrate.

33. (Original) The combination of Claim 25, wherein the water-soluble polymer is crosslinked before being combined with the substrate.

34. (Previously Presented) The absorbent binder desiccant composition of Claim 1, wherein the desiccant comprises an anhydrous salt.

35. (Previously Presented) The absorbent binder desiccant composition of Claim 1, wherein the desiccant comprises a capillary desiccant.

36. (Previously Presented) The absorbent binder desiccant composition of Claim 14, wherein the desiccant component comprises a compound selected from the group consisting of anhydrous salts, capillary desiccants, and combinations thereof.

37. (Previously Presented) The combination of Claim 25, wherein the desiccant component comprises a compound selected from the group consisting of anhydrous salts, capillary desiccants and combinations thereof.